

(11) Publication number:

**0 360 766
A1**

(12)

EUROPEAN PATENT APPLICATION

(21) Application number: 88830402.7

(5) Int. Cl.⁵: **A 46 B 9/08
A 46 B 17/08**

(22) Date of filing: 19.09.89

(20) Priority: 19.09.88 IT 8880488

(13) Date of publication of application:
28.03.90 Bulletin 90/13(64) Designated Contracting States:
AT BE CH DE ES FR GB GR IT LI LU NL SE(71) Applicant: Marino, Antonio
Contrada Bosco, 430
I-91025 Marsala TP (IT)(72) Inventor: Marino, Antonio
Contrada Bosco, 430
I-91025 Marsala TP (IT)(74) Representative: Almi, Luciano et al
c/o Società Italiana Brevetti S.p.A. Via Carducci 8
I-20123 Milano (IT)

(64) Improved toothbrush.

(17) A toothbrush wherein the brushing bristles (3) are flanked, along the pair of elongated sides of bristle-carrying head (2) by small resilient rubber-like cylinders (4) preferably provided as an integral body with a resilient lining (5) coating the three free sides of the bristle-carrying head.

While the center bristles are provided for the routine tooth cleaning, the outer small resilient rubber-like cylinders perform a massaging action on the gums they come into engagement with.

**EP 0 360 766 A1**

Bundesdruckerei Berlin

Available Copy

1

EP 0 360 766 A1

2

Description

IMPROVED TOOTHBRUSH

This invention relates to an improved toothbrush, and in particular to a toothbrush adapted as well to perform a massaging action for the gums.

As it is known, the function of the so called toothbrushes comprises not only a simple cleaning of the teeth, but also providing an adequate massaging action to the adjacent gum area, in order to improve the capillary blood distribution, thereby strengthening the structure thereof.

Therefore, countless attempts have been made in order to reconcile the two requirements above, by varying either the shape, the size, the bristle angle relative to the support and/or handle, or by using differential hardness bristles, for instance by providing inner stiff bristles surrounded by more flexible outer bristles. However, in any case, the problem of gum massage has never been satisfactorily solved in that, if the bristles provided to come into contact mainly with the gums are too stiff, they can cause bruises on said gums, and therefore they can induce bleeding or, in the extreme, they can make the gums to move back as a consequence of the traumatic action; on the other hand, if more flexible bristles are provided for the gum massage, said bristles fail very quickly to perform their action in that, under the effect of the pressure manually applied to the handle, they tend to bend, whereby they become unable to perform their brushing action any longer.

Taking into account the above drawbacks of the commercially available toothbrushes, there has been contrived and provided the toothbrush according to this invention. Said toothbrush includes a brushing head wherein the outer bristles are replaced by small resilient cylinders having round ends and, in addition, the stiff body of said brushing head may be provided, at the outer region thereof, with a resilient lining layer adapted to dampen impacts of the toothbrush both against the teeth and against the gums.

This invention is described more particularly in the following, for sake of clarity, referring to the attached drawings, wherein:

Figure 1 shows a perspective view of the toothbrush of this invention;

Figure 2 shows an elevational side view of the toothbrush of Figure 1; and

Figure 3 shows a top plan view of the toothbrush of Figure 1.

As it is shown in the Figures, the toothbrush according to this invention in anatomical handle 1 connected to brushing head 2 provided with center brushing bristles 3 flanked on the outer side, along the pair of elongated sides of brushing head 3, by small resilient cylinders 4, having round ends. Said outer small resilient cylinders 4 may be incorporated at the bottom end thereof within the rigid body of brushing head 2 or else, as it is shown in the drawing, they may be integral with a resilient lining member 5 which surrounds said brushing head 2 on the three free sides thereof.

The above arrangement makes it possible to

provide an effective toothbrushing action by means of bristles 3, and a pleasant gum massaging action provided by small resilient cylinders 4, while the outer resilient lining 5 prevents rigid body 2 from coming directly into engagement with the teeth or with the gums, whereby traumatic impacts are spared to both.

Usage of the inventive toothbrush enables one to perform both the routine tooth cleaning and associated plaque removal, and an effective pleasant massaging function on the gums, owing to the resilient behaviour of the small peripheral cylinders comprised of any suitable rubber material, like for instance natural rubber or artificial elastomers.

In order to ensure that a gum massaging action is performed by small peripheral resilient cylinders 4, their round ends project slightly above the level of the center bristles, so that while the toothbrush is being used on the dental arch, the small resilient cylinders are made to bend outwards whereby they reach the proximal limit of the gums involved.

While this invention has been described based on a preferred embodiment thereof, variations and/or modifications may be made by those skilled in this art, without exceeding the protective scope of the invention.

Claims

1. A toothbrush characterized in that bristles (3) provided for cleaning the teeth are flanked, along the pair of elongated sides of bristle-carrying head (2), by two arrays of small resilient cylinders (4), provided for massaging the gums.

2. The toothbrush of Claim 1 further characterized in that bristle-carrying head (2) is provided, on the three free sides thereof, with a resilient material lining (5) made integral with said small resilient cylinders (4).

3. The toothbrush of Claim 1 or 2, characterized in that said small side resilient cylinders (4) are provided with rounded bulging heads at the free ends thereof, protruding above the level of the center brushing bristles (3).

4. The toothbrush substantially as described and shown in the attached drawings.

EP 0 360 766 A1

Fig. 1

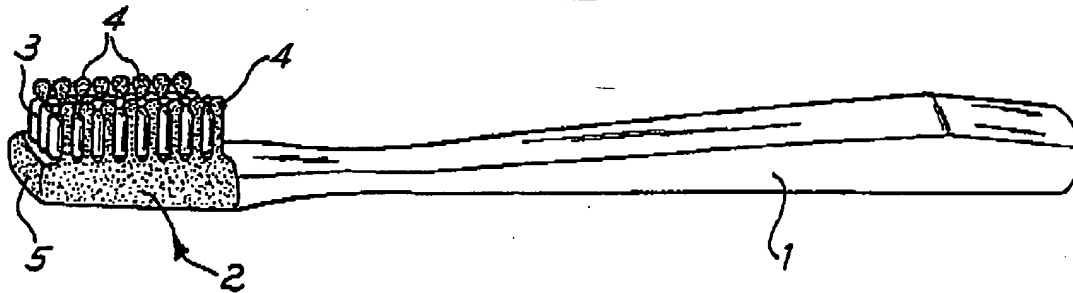


Fig. 2

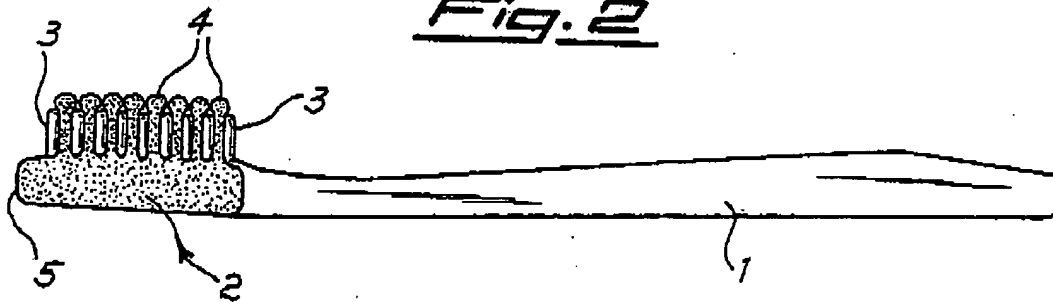
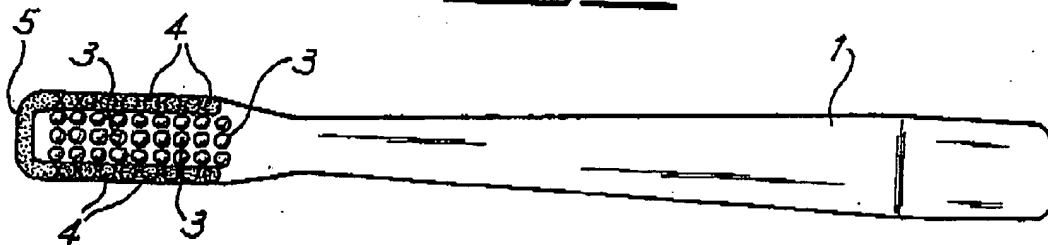


Fig. 3



Best Available Copy



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 89 83 0402

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	FR-A-2440171 (DOLINSKY) * page 1, line 20 - page 5, line 8; figures 1-6 *	1, 3	A46B9/06 A46B17/08
Y	---	2	
Y	FR-A-561692 (LECHAT) * claims 1-4; figures 1-6 *	2	
A	DE-U-8715893 (LINK) * claim 1; figures 1-6 *	1, 2	
A	FR-A-2511586 (LACAMBRE ET AL) * page 1, line 17 - page 2, line 8; figures 1-6 *	1, 3	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			A46B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 12 DECEMBER 1989	Examiner ERNST R. T.
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document</p> <p>T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons *: member of the same patent family, corresponding document</p>			

EPO FORM 1503 (03/87) (P.401)

Best Available Copy

12

EUROPEAN PATENT APPLICATION

21 Application number: 89830402.7

51 Int. Cl.⁵: **A 46 B 9/06**
A 46 B 17/08

22 Date of filing: 19.09.89

30 Priority: 19.09.88 IT 5880488

43 Date of publication of application:
28.03.90 Bulletin 90/13

84 Designated Contracting States:
AT BE CH DE ES FR GB GR IT LI LU NL SE

71 Applicant: **Marino, Antonio**
Contrada Bosco, 430
I-91025 Marsala TP (IT)

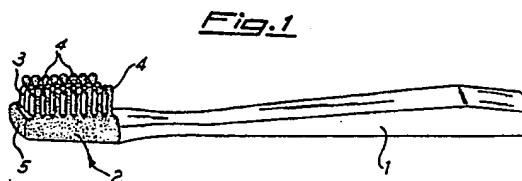
72 Inventor: **Marino, Antonio**
Contrada Bosco, 430
I-91025 Marsala TP (IT)

74 Representative: **Aimi, Luciano et al**
c/o Società Italiana Brevetti S.p.A. Via Carducci 8
I-20123 Milano (IT)

54 **Improved toothbrush.**

57 A toothbrush wherein the brushing bristles (3) are flanked, along the pair of elongated sides of bristle-carrying head (2) by small resilient rubber-like cylinders (4) preferably provided as an integral body with a resilient lining (5) coating the three free sides of the bristle-carrying head.

While the center bristles are provided for the routine tooth cleaning, the outer small resilient rubber-like cylinders perform a massaging action on the gums they come into engagement with.



Description

IMPROVED TOOTHBRUSH

This invention relates to an improved toothbrush, and in particular to a toothbrush adapted as well to perform a massaging action for the gums.

As it is known, the function of the so called toothbrushes comprises not only a simple cleaning of the teeth, but also providing an adequate massaging action to the adjacent gum area, in order to improve the capillary blood distribution, thereby strengthening the structure thereof.

Therefore, countless attempts have been made in order to reconcile the two requirements above, by varying either the shape, the size, the bristle angle relative to the support and/or handle, or by using differential hardness bristles, for instance by providing inner stiff bristles surrounded by more flexible outer bristles. However, in any case, the problem of gum massage has never been satisfactorily solved in that, if the bristles provided to come into contact mainly with the gums are too stiff, they can cause bruises on said gums, and therefore they can induce bleeding or, in the extreme, they can make the gums to move back as a consequence of the traumatic action; on the other hand, if more flexible bristles are provided for the gum massage, said bristles fail very quickly to perform their action in that, under the effect of the pressure manually applied to the handle, they tend to bend, whereby they become unable to perform their brushing action any longer.

Taking into account the above drawbacks of the commercially available toothbrushes, there has been contrived and provided the toothbrush according to this invention. Said toothbrush includes a brushing head wherein the outer bristles are replaced by small resilient cylinders having round ends and, in addition, the stiff body of said brushing head may be provided, at the outer region thereof, with a resilient lining layer adapted to dampen impacts of the toothbrush both against the teeth and against the gums.

This invention is described more particularly in the following, for sake of clarity, referring to the attached drawings, wherein:

Figure 1 shows a perspective view of the toothbrush of this invention;

Figure 2 shows an elevational side view of the toothbrush of Figure 1; and

Figure 3 shows a top plan view of the toothbrush of Figure 1.

As it is shown in the Figures, the toothbrush according to this invention in anatomical handle 1 connected to brushing head 2 provided with center brushing bristles 3 flanked on the outer side, along the pair of elongated sides of brushing head 3, by small resilient cylinders 4, having round ends. Said outer small resilient cylinders 4 may be incorporated at the bottom end thereof within the rigid body of brushing head 2 or else, as it is shown in the drawing, they may be integral with a resilient lining member 5 which surrounds said brushing head 2 on the three free sides thereof.

The above arrangement makes it possible to

provide an effective toothbrushing action by means of bristles 3, and a pleasant gum massaging action provided by small resilient cylinders 4, while the outer resilient lining 5 prevents rigid body 2 from coming directly into engagement with the teeth or with the gums, whereby traumatic impacts are spared to both.

Usage of the inventive toothbrush enables one to perform both the routine tooth cleaning and associated plaque removal, and an effective pleasant massaging function on the gums, owing to the resilient behaviour of the small peripheral cylinders comprised of any suitable rubber material, like for instance natural rubber or artificial elastomers.

In order to ensure that a gum massaging action is performed by small peripheral resilient cylinders 4, their round ends project slightly above the level of the center bristles, so that while the toothbrush is being used on the dental arch, the small resilient cylinders are made to bend outwards whereby they reach the proximal limit of the gums involved.

While this invention has been described based on a preferred embodiment thereof, variations and/or modifications may be made by those skilled in this art, without exceeding the protective scope of the invention.

Claims

1. A toothbrush characterized in that bristles (3) provided for cleaning the teeth are flanked, along the pair of elongated sides of bristle-carrying head (2), by two arrays of small resilient cylinders (4), provided for massaging the gums.

2. The toothbrush of Claim 1 further characterized in that bristle-carrying head (2) is provided, on the three free sides thereof, with a resilient material lining (5) made integral with said small resilient cylinders (4).

3. The toothbrush of Claim 1 or 2, characterized in that said small side resilient cylinders (4) are provided with rounded bulging heads at the free ends thereof, protruding above the level of the center brushing bristles (3).

4. The toothbrush substantially as described and shown in the attached drawings.

Fig. 1

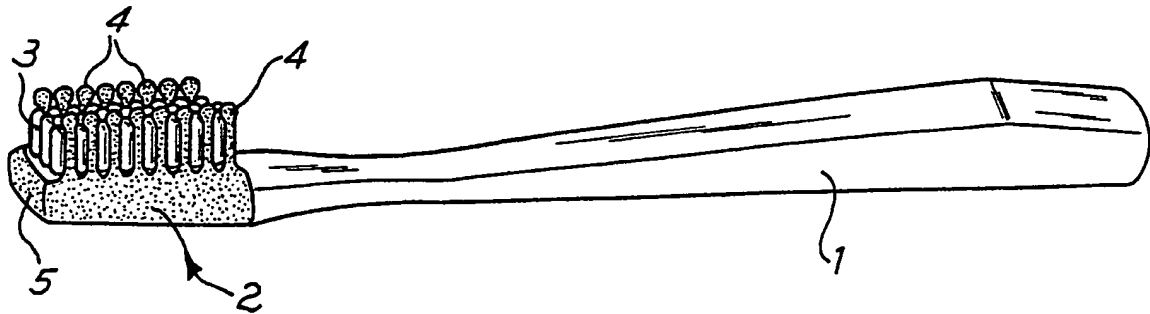


Fig. 2

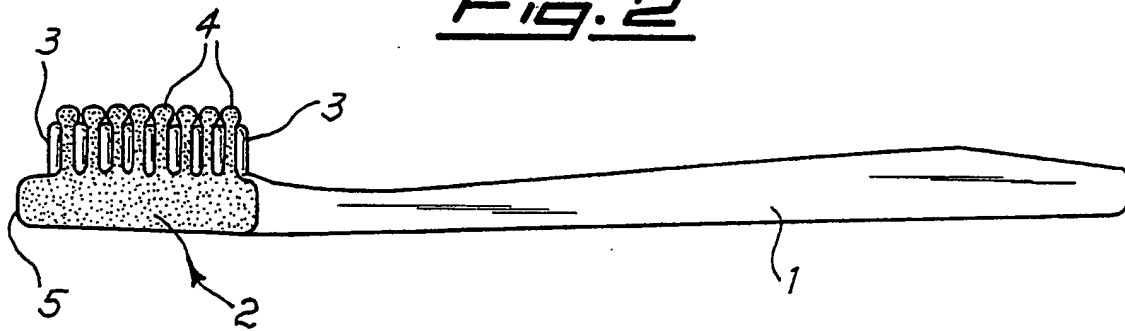
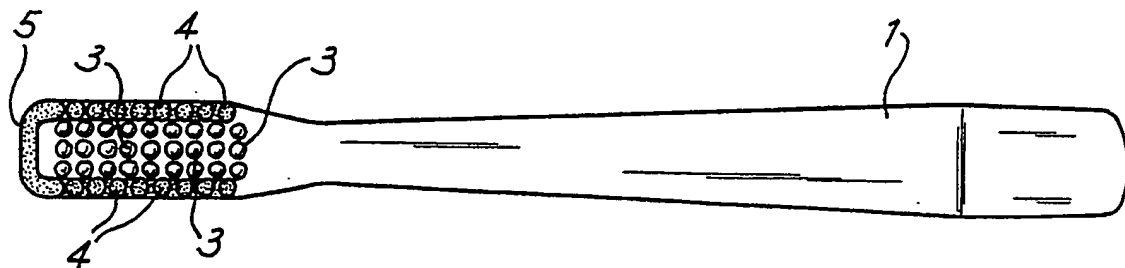


Fig. 3





EP 89 83 0402

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	FR-A-2440171 (DOLINSKY) * page 1, line 20 - page 5, line 8; figures 1-6 *	1, 3	A46B9/06 A46B17/08
Y	---	2	
Y	FR-A-561692 (LECHAT) * claims 1-4; figures 1-6 *	2	
A	---		
A	DE-U-8715893 (LINK) * claim 1; figures 1-6 *	1, 2	
A	---		
A	FR-A-2511586 (LACAMBRE ET AL) * page 1, line 17 - page 2, line 8; figures 1-6 * -----	1, 3	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			A46B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 12 DECEMBER 1989	Examiner ERNST R.T.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application I : document cited for other reasons & : member of the same patent family, corresponding document			

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☒ FADED TEXT OR DRAWING
- ☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☐ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☒ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.